Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Questions to Go Along with the Unit 8 Notes, Part 1 – The Cell Cycle and Mitosis**

Ms. OK, AP Biology, 2014-2015

1. Describe the structure of eukaryotic chromatin and chromosomes. Why does eukaryotic DNA organize into chromosomes in preparation for cell division?
2. During what stage of mitosis does chromatin coil into chromosomes?
3. During what stage of mitosis do chromosomes uncoil into chromatin?
4. Do human red blood cells and bone cells have the same number of chromosomes? Why or why not? What about sperm cells?
5. What is the role of the mitotic spindle in cell division? During which stages of cell division is the mitotic spindle built and broken down?
6. After chromosomes attach to the fibers of the mitotic spindle and line up at the center of the dividing cell, what happens next?
7. How is cytokinesis different from mitosis? When during the cell cycle does cytokinesis take place?
8. How does cytokinesis occur differently in plant vs. animal cells?
9. How does mitosis produce daughter cells with the same number of chromosomes as the parent cell?
10. What purposes does mitosis serve in multicellular organisms?